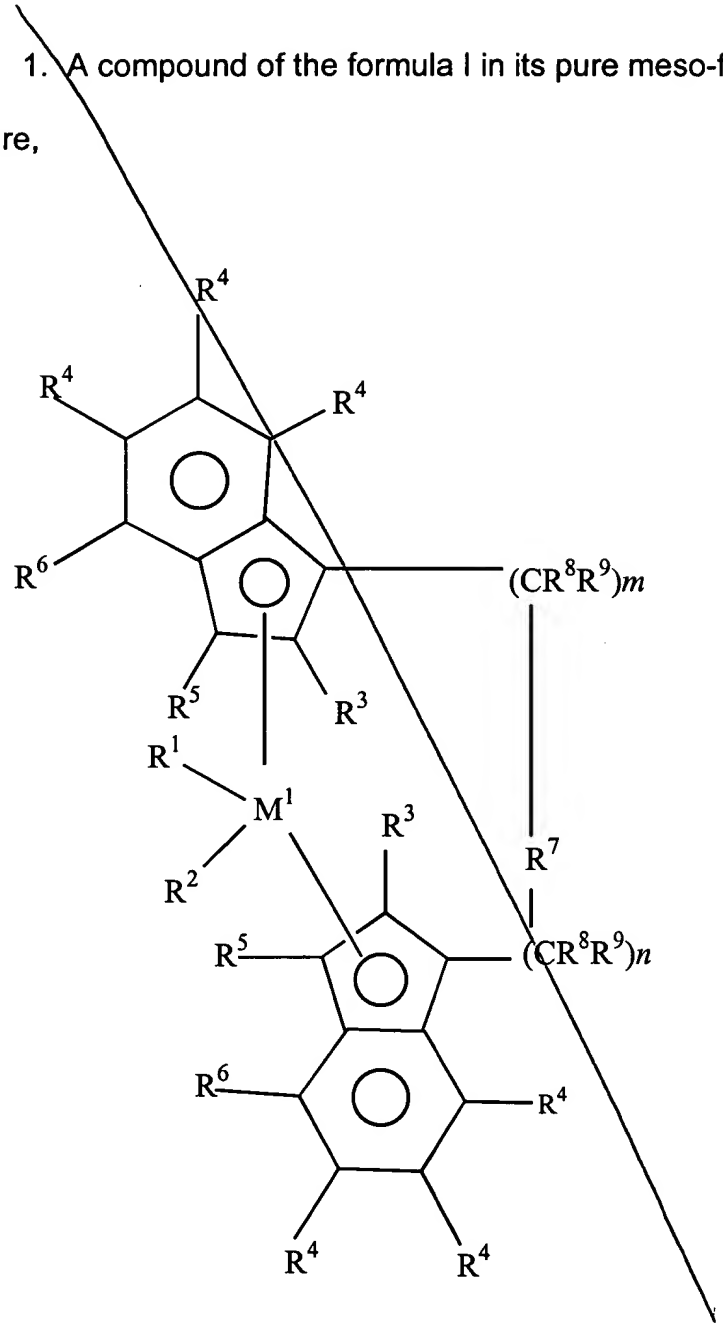
1. A compound of the formula I in its pure meso-form or as a meso:rac> 1:99 mixture,



(I)

in which

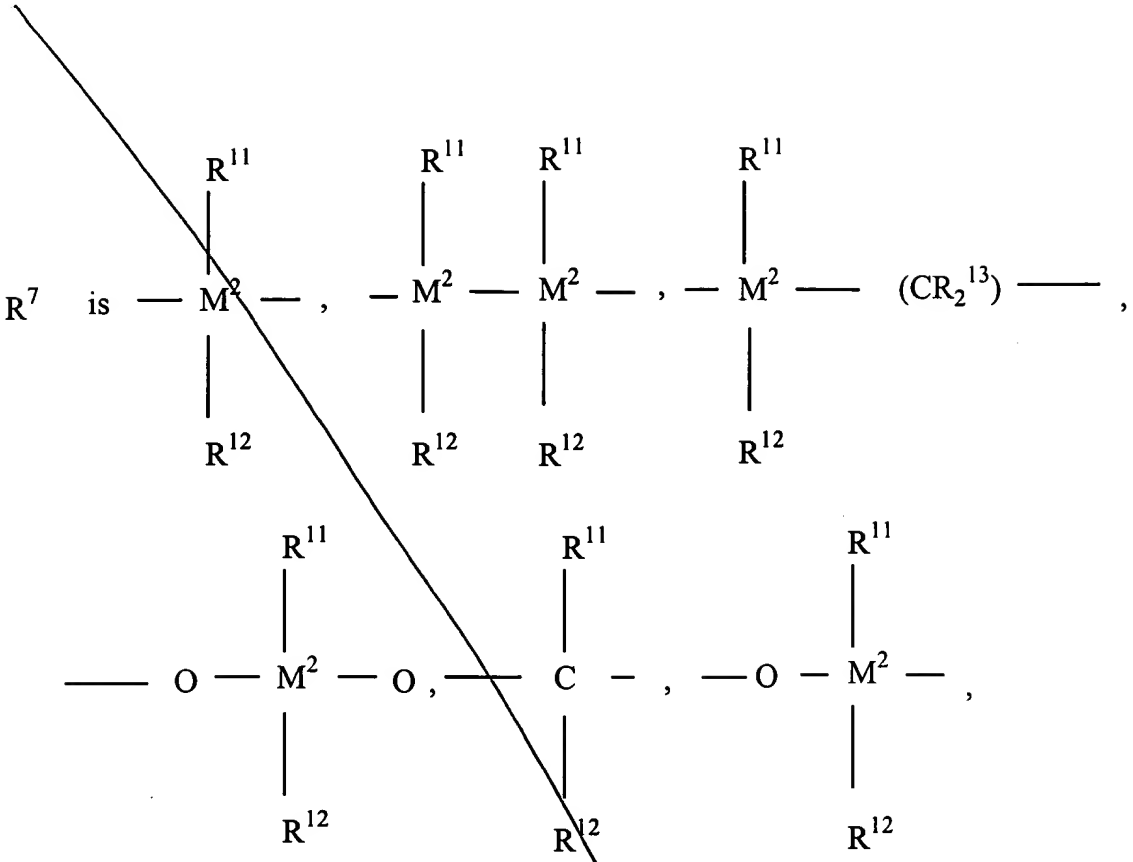
M^1 is a metal from group IVb, Vb or VIb of the Periodic Table,

R^1 and R^2 are identical or different and are a hydrogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-alkoxy group, a C_6-C_{10}-aryl group, a C_6-C_{10}-aryloxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_7-C_{40}-alkylaryl group, a C_8-C_{40}-arylalkenyl group or a halogen atom,

the radicals R^4 and R^5 are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, which may be halogenated, a C_6-C_{10}-aryl group, which may be halogenated, or an $-NR_2^{10}$, $-SR^{10}$, $-OSiR_3^{10}$, $-SiR_3^{10}$ or $-PR_2^{10}$ radical in which R^{10} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group,

R^3 and R^6 are identical or different and are as defined for R^4, with the proviso that R^3 and R^6 are not hydrogen,

or two or more of the radicals R^3 to R^6, together with the atoms connecting them, form a ring system,



R^7 is

$>BR^{11}$, $>AlR^{11}$, -Ge-, -Sn-, -O-, -S-, >SO, $>SO_2$, $>NR^{11}$, >CO, $>PR^{11}$ or $>P(O)R^{11}$,

where

R^{11}[, R^{12} and R^{13} are identical or] and R^{12} are different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-fluoroalkyl group, a C_6-C_{10}-aryl group, a C_6-C_{10}-fluoroaryl group, a C_1-C_{10}-alkoxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_8-C_{40}-arylalkenyl group or a C_7-C_{40}-alkylaryl group,

R^{13} is a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-fluoroalkyl

group, a C_6-C_{10}-aryl group, a C_6-C_{10}-fluoroaryl group, a C_1-C_{10}-alkoxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_8-C_{40}-arylalkenyl group or a C_7-C_{40}-alkylaryl group,

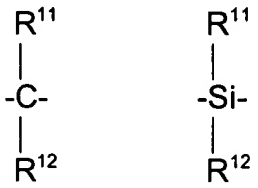
or R^{11} and R^{12}, or R^{11} and R^{13}, in each case together with the atoms connecting them, form a ring,

M^2 is silicon, germanium or tin,

R^8 and R^9 are identical or different and are as defined for R^{11}, and

m and n are identical or different and are zero, 1 or 2, where m plus n is zero, 1 or 2.

2. A compound as claimed in claim 1, wherein, in the formula I, M^1 is Zr or Hf, R^1 and R^2 are identical or different and are methyl or chlorine, R^3 and R^6 are identical or different and are methyl, isopropyl, phenyl, ethyl or trifluoromethyl, R^4 and R^5 are hydrogen or as defined for R^3 and R^6, or R^4 forms an aliphatic or aromatic ring with R^6, or adjacent radicals R^4 form an aliphatic or aromatic ring, and R^7 is a



radical, and m plus n are zero or 1.

3. A compound [as claimed in claim 1, wherein the compound of the formula I is]

selected from the group consisting of [Me_2Si(2,4-dimethyl-1-indenyl)$_2ZrCl_2$, Me_2Si(2-methyl-4-isopropyl-1-indenyl)$_2ZrCl_2$, Me_2Si(2-ethyl-4,methyl-1-indenyl)$_2ZrCl_2$, Ph(Me)Si(2-methyl-4-isopropyl-1-indenyl)$_2ZrCl_2$, Me_2Si(2-methyl-4,5-benzoindenyl)$_2ZrCl_2$,] Me_2Si(2,4,6-trimethyl-1-indenyl)$_2ZrCl_2$, Me_2Si(2-methyl-4,6-diisopropyl-1-indenyl)$_2ZrCl_2$, [Me_2Si(2-methyl-α-acenaphth-indenyl)$_2ZrCl_2$,] Me_2Si(2-methyl-4-phenyl-1-indenyl)$_2ZrCl_2$, ethylene(2,4,6-trimethyl-1-indenyl)$_2ZrCl_2$, [ethylene(2-methyl-4,5-benzoindenyl)$_2ZrCl_2$,] or methylethylene(2-methyl-α-acenaphthindenyl)$_2ZrCl_2$ [or Ph(Me)Si(2-methyl-α-acenaphthindenyl)$_2ZrCl_2$].

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